

AMENDMENTS TO THE CLAIMS

Claim 1 (original) A printer comprising:

- 5 a housing;
 a track installed within the housing;
 a carriage moveably installed on the track;
 a print head installed on the carriage for ejecting ink
 onto a medium;
 a position detecting mechanism comprising a first portion
 10 installed at a calibration position neighboring the
 track, and a second portion installed on the carriage;
 and
 control circuitry for controlling operations of the printer
 and recording the calibration position at the track,
 15 the control circuitry comprising a counter for recording
 a counted position of the second portion of the position
 detecting mechanism;
 wherein the calibration position is within a range which
 the print head is capable of printing the medium, and
 20 the second portion is capable of passing by the first
 portion when the print head simultaneously ejects ink
 onto the medium.

- 25 Claim 2 (original) The printer of claim 1 wherein the second
 portion comprises a light source and a light sensor installed
 on the carriage, the first portion comprising a shield
 installed on the housing for shielding light transmitted
 from the light source to the light sensor.

- 30 Claim 3 (currently amended) The printer of claim 2 wherein
 a first edge of the shield corresponds to ~~the~~ a first
~~calibration position neighboring the track;~~ and when the
 light source and the light sensor on the carriage move to
 35 a the first calibration position which the shield starts
 to shield the light transmitted from the light source to
 the light sensor, the control circuitry will compare the

position of the light source and the light sensor corresponding to the track counted by the counter with the first calibration position recorded by the control circuitry to obtain a first difference of the two positions;
 5 wherein a second edge of the shield corresponds to a second calibration position; and when the light source and the light sensor on the carriage move to the second calibration position which the light sensor starts to receive the light transmitted from the light source again, the control
 10 circuitry will compare the position of the light source and the light sensor corresponding to the track counted by the counter with the second calibration position recorded by the control circuitry to obtain a second difference of the two positions.

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Claim 4 (cancelled).

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20 Claim 5 (original) The printer of claim 1 wherein the first portion comprises a light source and a light sensor installed on the housing, the second portion comprising a shield installed on the carriage for shielding light transmitted from the light source to the light sensor.

25 Claim 6 (original) The printer of claim 5 wherein the light source and the light sensor correspond to the calibration position of the track; and when a first edge of the shield moves to a position which the shield starts to shield the light transmitted from the light source to the light sensor, the control circuitry will compare the position of the first
 30 edge of the shield corresponding to the track counted by the counter with the calibration position recorded by the control circuitry to obtain a difference of the two positions.

35 Claim 7 (original) The printer of claim 5 wherein the light source and the light sensor correspond to the calibration

position of the track; and when a second edge of the shield moves to a position which the light sensor starts to receive the light transmitted from the light source again, the control circuitry will compare the position of the second edge of the shield corresponding to the track counted by the counter with the calibration position recorded by the control circuitry to obtain a difference of the two positions.

- 10 Claim 8 (original) The printer of claim 1 wherein when printing the medium, if a difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is within a first predetermined range, the control circuitry does not need to calibrate the position of the carriage.

- 15 Claim 9 (original) The printer of claim 8 wherein when printing the medium, if the difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is between the first predetermined range and a second predetermined range, the control circuitry will calibrate the position of the carriage after the medium is printed.

- 20 Claim 10 (original) The printer of claim 9 wherein when printing the medium, if the difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is greater than the second predetermined range, the control circuitry will instantly stop printing the medium to calibrate the position of the carriage.

- 25 Claim 11 (original) The printer of claim 1 further comprising

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a step motor for driving the carriage wherein the counter counts rotational steps of the step motor to record the position of the second portion corresponding to the track.

5 Claim 12 (original) The printer of claim 1 further comprising:

a DC motor for driving the carriage;

an optical ruler installed on the housing;

a light source installed on the carriage for emitting light toward the optical ruler; and

10 a light sensor for detecting the light emitted by the light source through the optical ruler and generating corresponding position signals;

wherein the counter uses the position signals generated

15 by the light sensor to record the position of the second portion corresponding to the track.

Claim 13 (original) A printer comprising:

a housing;

a track installed within the housing;

20 a carriage moveably installed on the track;

a print head installed on the carriage for ejecting ink onto a medium;

25 a position detecting mechanism comprising a first portion installed at a calibration position neighboring the track, and a second portion installed on the carriage, the calibration position being within a range the print head is capable of printing the medium, the second portion being capable of passing by the first portion when the print head simultaneously ejects ink onto the medium; and

30 control circuitry for controlling operations of the printer and recording the calibration position, the control circuitry having a counter for recording a counted position of the second portion of the position detecting mechanism;

35 wherein when a difference between the counted position of

the second portion and the calibration position recorded in the control circuitry is larger than a predetermined threshold, the control circuitry calibrates the position of the carriage.

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Claim 14 (original) The printer of claim 13 wherein the second portion comprises a light source and a light sensor installed on the carriage, the first portion comprising a shield installed on the housing for shielding light transmitted from the light source to the light sensor.

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Claim 15 (original) The printer of claim 13 wherein the first portion comprises a light source and a light sensor installed on the housing, the second portion comprising a shield installed on the carriage for shielding light transmitted from the light source to the light sensor.

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